Product Specification

24-Port Gigabit PoE Managed Stackable Switch

SGSW-24040P / SGSW-24040P4

Version 1.3

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Change History:

Revision:	Date:	Author:	Change List
Version 1.0	2008/3/20	Kent Kang	Initial Release
Version 1.1	2009/10/22	Kent Kang	Add PoE schedule
Version 1.2	2010/04/10	Neo Tsai	Add IPv6 and enhanced features
Version 1.3	2012/03/30	Kent Kang	Add RMON features

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1. PRODUCT DESCRIPTION

Centralized Power Management for Enterprise and SMB Power over Gigabit Ethernet Networking

The SGSW-24040P series Gigabit PoE Switch is ideally applicable for large scale of network deployment in the enterprises, Telecoms or campus. A high performance with cost-effective solution is achieved by the SGSW-24040P series PoE Switch providing Gigabit throughput and power supply to PoE compliant devices including 802.11n AP with Gigabit PoE LAN port, Mega-Pixel PoE IP Camera, PoE VoIP phones and etc. **Power** and **high speed data switching** are integrated into one unit and delivered over a single cable, eliminating costs and time for additional AC wiring. The Gigabit PoE Switch also eliminates the need for dedicated electrical outlets on the wall, ceiling or any unreachable place. A maximum of 15.4W is available on the Gigabit ports for powering PDs (Powered Device), with a maximum per device PoE delivery of 380W available for all ports to satisfy the increasing needs for power consumption of powered devices.

Cost-effective IPv6 Managed Gigabit Switch Solution for SMB

The SGSW-24040P series which supports both IPv4 and IPv6 management functions. It can work with original network structure (IPv4) and also support the new network structure (IPv6) in the future. With easy and friendly management interfaces and plenty of management functions included, the SGSW-24040P series is the best choice for ISP to build the IPv6 FTTx edge service and for SMB to connect with the IPv6 network.

High-Density, Resilient Deployment Switch solution for Growing Gigabit Networking of Enterprise, Campus and Data Center

For the growing Gigabit network demand, PLANET provides new generation Stackable Gigabit Switch solution, SGSW-24040 series Switch to fulfill the need of large scale of network deployment in the enterprises, Telecoms or campus. The new SGSW-24040 series Switch member, the SGSW-24040P and the SGSW-24040P4, is the Layer 2 Managed Stackable Gigabit Switch which provides 24 10/100/1000Mbps Gigabit Ethernet ports with IEEE 802.3af PoE injector, 4 shared Gigabit SFP slots, and 2 dedicated High-Speed HDMI-like interfaces for stacking with the series of switches.

Up to 16 units, 384 Gigabit Ethernet ports can be managed by a stacking group and you can add ports and functionality as needed. The 2 built-in stacking ports providing 5Gbps bandwidth and up to 20Gbps Bi-directional speed, it can handle extremely large amounts of data in a secure topology linking for backbone or high capacity network server with 68Gbps switching fabric per unit. The stacking technology also enables the chassis-based switches to be integrated into SGSW-24040 series Managed Switch but without the expensive up-front cost.

2. PRODUCT FEATURES

- **Physical Port**
  - **24-Port 10/100/1000Base-T** Gigabit Ethernet RJ-45 with **IEEE 802.3af PoE** Injector
  - **4 100/1000Base-X** mini-GBIC/SFP slots, shared with Port-21 to Port-24
  - **2 HDMI-like 5GbE** Stacking interfaces
  - **RS-232 DB9** console interface for Switch basic management and setup

- **Power over Ethernet**
  - Complies with IEEE 802.3af Power over Ethernet End-Span PSE
  - Up to 24 IEEE 802.3af devices powered
  - Support PoE Power up to 15.4 watts for each PoE ports
  - Auto detect powered device (PD)
  - Circuit protection prevent power interference between ports
  - Remote power feeding up to 100m
  - PoE Management
    - Total PoE power budget control
    - Pert port PoE function enable/disable
    - PoE Port Power feeding priority
    - Per PoE port power limit
    - Per port PoE power schedule
    - PD classification detection
    - Over Temperature Protection
    - PoE Temperature Threshold
    - PoE power Usage Threshold
    - PoE events alarm by SNMP Trap, e-Mail and Syslog

- **Stacking**
  - Hardware stack up to 16 units and 384 Gigabit ports
  - Single IP address stack management
  - Stacking architecture supports Chain and Ring mode
  - Plug and Play connectivity
  - Mirror across stack
  - Link Aggregation groups spanning multiple switches in a stack
  - Hardware learning with MAC table synchronization across stack

- **Layer 2 Features**
  - Prevents packet loss with back pressure (Half-Duplex) and IEEE 802.3x PAUSE frame flow control (Full-Duplex)
  - High performance of Store-and-Forward architecture, broadcast storm control and runt/CRC filtering eliminates

erroneous packets to optimize the network bandwidth

- Supports **VLAN**
  - IEEE 802.1Q Tagged VLAN
  - Up to 255 VLANs groups, out of 4041 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Private VLAN Edge (PVE)
- Supports **Spanning Tree Protocol**
  - STP, IEEE 802.1d (Spanning Tree Protocol)
  - RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)
  - MSTP, IEEE 802.1s Multiple Spanning Tree Protocol, spanning tree by VLAN
  - BPDU Guard
- Support **Link Aggregation**
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (Static Trunk)
  - Maximum 12 trunk groups, up to 16 ports per trunk group
  - Up to 32Gbps bandwidth (Duplex Mode)
- Provide Port Mirror (many-to-1)
- Port Mirroring to monitor the incoming or outgoing traffic on a particular port

➢ **Quality of Service**

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 4 priority queues on all switch ports
- Traffic classification:
  - IEEE 802.1p CoS
  - TOS / DSCP / IP Precedence of IPv4/IPv6 packets
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing policies on the switch port
- QoS Control List Wizard makes QoS creation and configuration easier and more quickly
- DSCP remarking
- Voice VLAN

➢ **Multicast**

- Supports IGMP Snooping v1, v2 and v3
- Querier mode support
- IGMP Snooping port filtering and throttling
- Multicast VLAN Registration (MVR)

➢ **Security**

- IEEE 802.1x Port-Based / MAC-Based network access authentication
- Built-in RADIUS client to co-operate with the RADIUS servers
- TACACS+ login users access authentication

- RADIUS / TACACS+ users access authentication
- IP-Based Access Control List (ACL)
- MAC-Based Access Control List
- Source MAC / IP address binding
- **DHCP Snooping** to filter un-trusted DHCP messages
- **Dynamic ARP Inspection** discards ARP packets with invalid MAC address to IP address binding
- **IP Source Guard** prevents IP spoofing attacks
- Auto DoS rule to defend DoS attack
- IP address access management to prevent unauthorized intruder

➢ **Management**

- Switch Management Interfaces
  - Console / Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH / SSL secure access
- Four RMON groups (history, statistics, alarms, and events)
- **IPv6** IP Address / NTP / DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- Firmware upload/download via HTTP / TFTP
- DHCP Relay and Relay Option 82
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) Protocol
- Cable Diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default
- PLANET Smart Discovery Utility for deploy management
- ICMPv6

3. PRODUCT SPECIFICATION

3.1 MAIN COMPONENT

Switch ASIC:	VITESSE VSC7407	X1
Giga PHY:	VITESSE VSC8358	X2
Combo PHY:	VITESSE VSC8658	X1
Power over Ethernet Controller	Power Design PD64012	X2
CPU:	ARM926EJ (integrated with VSC7405)	x 1
Flash:	MX29LV128DBT2C (16Mbytes)	x 1
DDR RAM:	Elpida D5116ADTA (64Mbytes / 512Mbits)	x 1
SRAM:	IDT71V124SA15TYG (128Kbytes / 1Mbits)	
Open frame power supply:	12V / 2.5A	x1

PoE power supply: **SGSW-24040P** – UMEC UP1301A (130W) x2
SGSW-24040P4 – IS Quasar QP-1204G (200W) x2

3.2 FUNCTION SPECIFICATION

Product	SGSW-24040P	SGSW-24040P4
Hardware Specification		
Copper Ports	24 10/ 100/1000Base-T RJ-45 Auto-MDI/MDI-X ports with IEEE 802.3af PoE injector	
SFP/mini-GBIC Slots	4 1000Base-SX/LX/BX SFP interfaces, shared with Port-21 to Port-24 100Base-FX SFP transceiver compatible	
Console	1 x RS-232 DB9 serial port (115200, 8, N, 1)	
Switch Processing Scheme	Store-and-Forward	
Switch Fabric	68Gbps	
Switch Throughput@64Bytes	35.7Mpps	
Address Table	8K entries	
Share data Buffer	1392 kilobytes	
Flow Control	IEEE 802.3x Pause Frame for Full-Duplex Back pressure for Half-Duplex	
Jumbo Frame	10Kbytes	
LED	System: Power, Master Ports: 10/100/1000 Link/Act, PoE In-Use, SFP Link, Stack Port Link	
Reset Button	< 5 sec: System reboot > 5 sec: Factory Default	
ESD Protection	6KV DC	
Power over Ethernet		
PoE Standard	IEEE 802.3af Power over Ethernet / PSE	
PoE Power Supply	End-Span	
PoE Power Output	Per Port 48V DC, 350mA . Max. 15.4 watts	
Power Pin Assignment	1/2(+), 3/6(-)	
PoE Power Budget	220 Watts	380 Watts
Number of PD@7Watts	24	24
Number of PD@15.4Watts	14	24
Stacking		
Stacking Ports	Two 5Gbps HDMI-Like interface	

Stacking Numbers	16
Stacking Bandwidth	10Gbps (Full-Duplex)
Stack ID Display	7-Segment LED Display (1~9, A~F,0)
Stack Topology	Ring / Chain / Back-to-Back stack
Layer 2 function	
Basic Management Interfaces	Console, Telnet, Web Browser, SNMPv1, v2c
Secure Management Interfaces	SSH, SSL, SNMP v3
Port configuration	Port disable/enable. Auto-negotiation 10/100/1000Mbps full and half duplex mode selection. Flow Control disable / enable. Bandwidth control on each port.
Port Status	Display each port's speed duplex mode, link status, Flow control status. Auto negotiation status, trunk status.
VLAN	802.1Q Tagged Based VLAN Port-Based VLAN Q-in-Q Private VLAN Edge (PVE) Up to 256 VLAN groups, out of 4094 VLAN IDs
Spanning Tree Protocol	IEEE 802.1D Spanning Tree IEEE 802.1w Rapid Spanning Tree IEEE 802.1s Multiple Spanning Tree Up to 8 MST instances
Link Aggregation	IEEE 802.3ad LACP / Static Trunk Support 12 groups of 16-Port trunk support
QoS	Traffic classification based, Strict priority and WRR 4-level priority for switching - Port Number - 802.1p priority - DS/TOS field in IP Packet
IGMP Snooping	IGMP (v1/v2/v3) Snooping, up to 8K multicast Groups IGMP Querier mode support
Access Control List	IP-Based ACL / MAC-Based ACL Up to 256 entries
SNMP MIBs	RFC-1213 MIB-II IF-MIB RFC-1493 Bridge MIB RFC-1643 Ethernet MIB RFC-2863 Interface MIB RFC-2665 Ether-Like MIB

	RFC-2737 Entity MIB RFC-2618 RADIUS Client MIB RFC-2819 RMON MIB (Group 1, 2, 3 and 9) RFC-2933 IGMP-STD-MIB RFC3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB Power over Ethernet
Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX/100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x Flow Control and Back pressure IEEE 802.3ad Port trunk with LACP IEEE 802.1d Spanning tree protocol IEEE 802.1w Rapid spanning tree protocol IEEE 802.1p Class of service IEEE 802.1Q VLAN Tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3af Power over Ethernet

3.3 PHYSICAL SPECIFICATIONS:

Dimensions:

440 x 300 x 44.5mm (W x D x H), 1U height

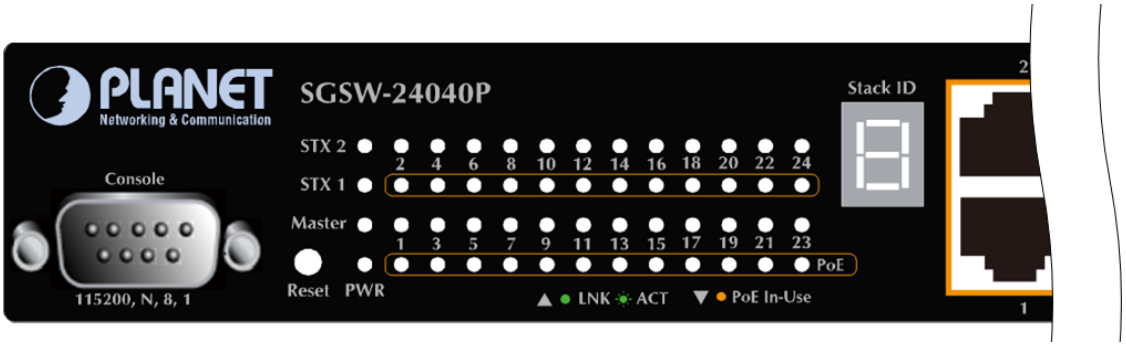
Weight:

4.5 kg

■ **Front Panel:**

■ **Rear Panel:**

■ **LED definition**



SGSW-24040P / SGSW-24040P4 LED panel

System

LED	Color	Function
PWR	**Green**	**Lights** to indicate that the Switch has power.
Master	**Green**	**Lights** to indicate that the Switch is the Master of the stack group
STX1	**Green**	**Lights** to indicate the stacking link through that port is successfully established.
STX2	**Green**	**Lights** to indicate the stacking link through that port is successfully established.

■ **Alert**

LED	Color	Function
PWR Alert	**Green**	**Lights** to indicate that the power supply failure
FAN1 Alert	**Green**	**Lights** to indicate that the FAN1 failure
FAN2 Alert	**Green**	**Lights** to indicate that the FAN2 failure
FAN3 Alert	**Green**	**Lights** to indicate that the FAN3 failure

■ **10/100/1000Base-T interfaces**

LED	Color	Function	
10/100/1000 LNK/ACT	**Green**	**Lights:**	To indicate the link through that port is successfully established with speed 10Mbps or 100Mbps or **1000Mbps**
		Blink:	To indicate that the switch is actively sending or receiving data over that port.
		Off:	If L10/100 NK/ACT LED light-> indicate that the port is operating at 10Mbps or 100Mbps If LNK/ACT LED Off -> indicate that the port is link down
PoE In-Use	**Orange**	**Lights**:	To indicate the port is providing 48VDC in-line power
		Off:	To indicate the connected device is not a PoE Powered Device (PD)

■ **1000Base-SX/LX SFP interfaces (Shared Port-21~Port-24)**

LED	Color	Function	
1000 LNK	**Green**	**Lights:**	To indicate the link through that SFP port is successfully established with speed **1000Mbps** with Gigabit SFP transceiver or **100Mbps** with 100Base-FX SFP transceiver
		Off:	To indicate that the SFP port is link down

3.4 ENVIRONMENTAL SPECIFICATION

Operating:

Temperature: 0°C ~ 50 degree C

Relative Humidity: 20% ~ 95% (non-condensing)

Storage:

Temperature: -40°C ~ 70 degree C

Relative Humidity: 20% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

Model		SGSW-24040P	SGSW-24040P4
AC Power Input Voltage:		100 ~ 240VAC, 50 / 60Hz, Auto-sensing.	
Power Consumption(System on):	110V	**29.3** Watts / 99.9 BTU	--
	220V	**30.2** Watts / 102.98 BTU	--
Power Consumption(Full Load):	110V	**39** Watts / 132.99 BTU	--
	220V	**40** Watts / 136.4 BTU	--
Power Consumption(PoE Full Load):	110V	Max. **290** Watts / 988.9 BTU	--
	220V	Max. **430** Watts / 1466.3BTU	--

3.6 REGULATORY COMPLIANCE

FCC Class A, CE.

3.7 REALIABILITY

MTBF > 50,000 hrs @ 25 Degree C

3.8 BASIC PACKAGING

- SGSW-24040P PoE Switch X1
- User's manual X1
- Quick Installation Guide X1
- Power Cord X1
- RS232 cable X1
- CB-STX50 – 50cm 5GbE Stacking Cable X1
- Rubber feet X4
- Two rack-mounting brackets with attachment screws X2

* Optional Accessory: CB-STX200 – 200cm 5GbE Stacking Cable

3.9 PACKING DIMENSION

Dimension: 520mm (W) x 450mm (D) x 90mm (H)

Weight: TBD KG (Gross Weight)

2 pcs in one carton